

June 2, 2006

Mr. Christopher M. Crane
President and Chief Nuclear Officer
Exelon Nuclear
Exelon Generation Company, LLC
Quad Cities Nuclear Power Station
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2
NRC EMERGENCY PREPAREDNESS INSPECTION REPORT
05000254/2006013(DRS); 05000265/2006013(DRS)

Dear Mr. Crane:

On May 19, 2006, the NRC completed an inspection at your Quad Cities Nuclear Power Station, Units 1 and 2. The enclosed report documents the inspection findings, which were discussed on May 19, 2006, with Mr. R. Gideon and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel. Specifically, this inspection focused on emergency preparedness, including your staff's determinations of performance indicators for the Emergency Preparedness Cornerstone.

On the basis of the results of this inspection, no findings of significance were identified.

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Sincerely,

/RA/

Kenneth Riemer, Chief
Plant Support Branch
Division of Reactor Safety

Docket Nos. 50-254; 50-265
License Nos. DPR-29; DPR-30

Enclosure: Inspection Report 05000254/2006013(DRS);
05000265/2006013(DRS)
w/Attachment: Supplemental Information

cc w/encl: Site Vice President - Quad Cities Nuclear Power Station
Plant Manager - Quad Cities Nuclear Power Station
Regulatory Assurance Manager - Quad Cities Nuclear Power Station
Chief Operating Officer
Senior Vice President - Nuclear Services
Senior Vice President - Mid-West Regional
Operating Group
Vice President - Mid-West Operations Support
Vice President - Licensing and Regulatory Affairs
Director Licensing - Mid-West Regional
Operating Group
Manager Licensing - Dresden and Quad Cities
Senior Counsel, Nuclear, Mid-West Regional
Operating Group
Document Control Desk - Licensing
Vice President - Law and Regulatory Affairs
Mid American Energy Company
Assistant Attorney General
Illinois Emergency Management Agency
State Liaison Officer, State of Illinois
State Liaison Officer, State of Iowa
Chairman, Illinois Commerce Commission
D. Tubbs, Manager of Nuclear
MidAmerican Energy Company

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Document Control Desk - Licensing
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Assistant Attorney General
Illinois Emergency Management Agency
State Liaison Officer, State of Illinois
State Liaison Officer, State of Iowa
Chairman, Illinois Commerce Commission
D. Tubbs, Manager of Nuclear
MidAmerican Energy Company

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos: 05000254; 05000265
License Nos: DPR-29; DPR-30

Report No: 05000254/2006013(DRS); 05000265/2006013(DRS)

Licensee: Exelon Nuclear

Facility: Quad Cities Nuclear Power Station

Location: Cordova, IL

Dates: May 15 through May 19, 2006

Inspectors: T. Ploski, Senior Emergency Preparedness Inspector
R. Jickling, Emergency Preparedness Inspector
K. Stoedter, Senior Resident Inspector
D. Reeser, Licensed Operator Examiner

Approved by: K. Riemer, Chief
Plant Support Branch
Division of Reactor Safety

Enclosure

SUMMARY OF FINDINGS

IR 05000254/2006013(DRS); 05000265/2006013(DRS); 05/15/2006 - 05/19/2006; Quad Cities Nuclear Power Station; Emergency Preparedness Specialist Report.

The report covers a 1 week baseline inspection by two regional emergency preparedness inspectors, one resident inspector, and one licensed operator examiner. The inspection focused on the Emergency Preparedness Cornerstone in the Reactor Safety strategic performance area during the biennial emergency preparedness exercise. This inspection also included a review of records related to the three emergency preparedness performance indicators for the period January 1, 2005, through March 31, 2006.

The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. Inspector-Identified and Self-Revealed Findings

None.

B. Licensee-Identified Violations

A violation of very low safety significance (Green), which was identified and corrected by the licensee, was reviewed by the inspectors. The violation and corrective actions are listed in Section 4OA7 of this report.

REPORT DETAILS

1. REACTOR SAFETY

Cornerstone: Emergency Preparedness

1EP1 Exercise Evaluation (71114.01)

a. Inspection Scope

The inspectors reviewed the May 17, 2006, biennial emergency preparedness exercise's objectives and scenario to ensure that the exercise would acceptably test major elements of the licensee's emergency plan and to verify that the exercise's simulated problems provided an acceptable framework to support demonstration of the licensee's capability to implement its plan. The inspectors also reviewed records of emergency preparedness drills, which were conducted in 2005 through April 2006, to verify that those drills' scenarios were sufficiently different from the scenario used in the May 2006 exercise.

The inspectors evaluated the licensee's exercise performance, focusing on the risk-significant activities of emergency classification, notification, and protective action decision making, as well as implementation of accident mitigation strategies in the following emergency response facilities:

- Control Room Simulator (CRS);
- Technical Support Center (TSC);
- Operations Support Center (OSC); and
- Emergency Operations Facility (EOF).

The inspectors also assessed the licensee's recognition of abnormal plant conditions, transfer of responsibilities between facilities, internal communications, interfaces with offsite officials, readiness of emergency facilities and related equipment, and overall implementation of the licensee's emergency plan.

The inspectors attended post-exercise critiques in the CRS, TSC, OSC, and EOF to evaluate the licensee's initial self-assessment of its exercise performance. The inspectors later met with the licensee's lead exercise evaluators to obtain the licensee's refined assessments of its exercise participants' performances. These self-assessments were then compared with the inspectors' independent observations and assessments to assess the licensee's ability to adequately critique its exercise performance.

These activities completed one inspection sample.

b. Findings

No findings of significance were identified.

1EP4 Emergency Action Level and Emergency Plan Changes (71114.04)

a. Inspection Scope

The inspectors reviewed Revisions 21, 22, and 23 of the Quad Cities Station Annex to the Exelon Standardized Emergency Plan to determine whether any changes made in these revisions reduced the effectiveness of the emergency plan and to verify that the licensee adequately incorporated Emergency Action Level (EAL) and terminology changes associated with NRC Bulletin 2005-02. Inspectors also reviewed a sample of letters of agreement with local offsite support organizations to verify that these agreements were current and consistent with emergency plan statements. The inspectors also reviewed a sample of licensee evaluations of the changes in the Annex revisions, which were performed in accordance with 10 CFR 50.54(q) and the licensee's corrective action program, to determine if the 10 CFR 50.54(q) reviews were adequate. The inspector also verified that minor corrections made to several numerical values in Table F-2, which was associated with the site-specific EALs' fission product barrier matrix, were editorial in nature.

b. Findings

A violation of very low safety significance, which was identified and corrected by the licensee, is summarized in Section 4OA7.

4. **OTHER ACTIVITIES**

4OA1 Performance Indicator (PI) Verification (71151)

Cornerstone: Emergency Preparedness

.1 Reactor Safety Strategic Area

a. Inspection Scope

The inspectors reviewed the licensee's records associated with each of the three emergency preparedness PIs to verify that the licensee's program was implemented consistent with the industry guidelines in Nuclear Energy Institute Publication No. 99-02, "Regulatory Assessment Performance Indicator Guideline," Revisions 2 and 3, and related licensee procedures. Specifically, licensee records related to the performance of the Alert and Notification System (ANS), key Emergency Response Organization (ERO) members' drill participation, and Drill and Exercise Performance (DEP) were reviewed to verify the accuracy and completeness of the PI data submitted to NRC for the period from January 1, 2005 through March 31, 2006. The following three PIs were reviewed:

Common

- ANS;
- ERO Drill Participation; and
- DEP.

These activities completed three PI samples.

b. Findings

No findings of significance were identified.

4OA7 Licensee-Identified Violations

The following violation of very low safety significance (Green) was identified by the licensee and is a violation of NRC requirements which meets the criteria of Section VI of the NRC Enforcement Policy, NUREG 1600, for being dispositioned as a Non-Cited Violation.

Per 10 CFR 50.54(q), the licensee is required to follow its emergency plan. Section 3 of the Quad Cities Station Annex to the Exelon Standardized Emergency Plan stated that the site-specific EALs scheme was based on the NRC-endorsed guidance of Nuclear Management and Resources Council/National Environmental Studies Project-007 document, "Methodology for Development of Emergency Action Levels." This guidance included criteria for classifying an Unusual Event due to an inability to maintain water level in the plant's spent fuel pool that would be at or above a numerical value listed in the Station's Technical Specifications.

In late 2004, the licensee revised the wording of corresponding site-specific EAL MU-11 as part of a project to improve the standardization of the wording of a number of EALs at its nuclear stations. Specifically, the words "above the fuel" were added to EAL MU-11's threshold value statement. However, the numerical value listed in the EAL's threshold value statement was not adjusted to refer to the minimum water level above the spent fuel that was listed in the Technical Specifications. Instead, the numerical value contained in EAL MU-11's threshold value statement incorrectly referred the pool's water level as measured from the bottom of the pool. The incorrect wording of revised EAL MU-11 was not identified in the licensee's internal review processes prior to incorporating this incorrectly worded EAL in Revision 19 of the Quad Cities Station Annex, which became effective in December 2004.

The licensee identified the aforementioned error in the wording of EAL MU-11 during its ongoing preparations to update its nuclear stations' EAL schemes to the guidance of Revision 4 of the Nuclear Energy Institute 99-01 publication, which NRC endorsed in 2003. The inspectors verified that the licensee adequately used its corrective action program to document its identification of the incorrectly worded EAL MU-11, and to adequately assess the causes of this erroneously worded EAL. The inspectors also verified that the licensee completed its planned corrective actions, as were indicated in corrective action program. These actions included promptly issuing a standing order to Control Room personnel to inform them of the incorrectly worded EAL MU-11 pending its correction in December 2005's Revision 22 of the Quad Cities Station Annex to the licensee's standardized emergency plan. The licensee also enhanced its administrative practices for processing proposed changes to its EALs.

The inspectors assessed the significance of the incorrect wording of EAL MU-11, which existed between December 2004 and December 2005, using NRC Manual Chapters 0612 and 0609, Appendix B. The inspectors concluded that this licensee-identified, incorrectly worded EAL was a violation of very low safety significance

(Green). The inspectors verified that adequate interim and longer-term corrective actions were completed as described in the corrective action program records.

4OA6 Meetings

.1 Exit Meeting

An exit meeting was conducted for:

- Emergency Preparedness with Mr. R. Gideon and other members of licensee management and staff at the conclusion of the inspection on May 19, 2006. The licensee acknowledged the information presented. No proprietary information was identified.

.2 Public and Media Briefing

- On May 19, 2006, an inspector was prepared to summarize NRC's preliminary exercise inspection conclusions at separate public and media briefings hosted by Department of Homeland Security (DHS) Region V and Region VII staffs in Cordova, Illinois. However, DHS staff cancelled both meetings due to no members of the public or media being present.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

R. Armitage, Training Director
W. Beck, Regulatory Assurance Manager
A. Fuhs, Regulatory Assurance Engineer
R. Gideon, Plant Manager
K. Kemper, Exelon Emergency Preparedness Director
R. Mika, Emergency Preparedness Drill and Exercise Coordinator
D. Moore, Nuclear Oversight Manager
K. Ohr, Radiation Protection Manager
M. Perito, Operations Manager
W. Stoermer, Communications Manager
P. Sunderland, Emergency Preparedness Coordinator
D. Tubbs, MidAmerican Energy
C. Tzomes, Emergency Preparedness Manager

Illinois Emergency Management Agency

R. Ganser, Resident Engineer

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened, Closed, and Discussed

None.

LIST OF DOCUMENTS REVIEWED

The following is a list of documents reviewed during the inspection. Inclusion on this list does not imply that the NRC inspectors reviewed the documents in their entirety but rather that selected sections of portions of the documents were evaluated as part of the overall inspection effort. Inclusion of a document on this list does not imply NRC acceptance of the document or any part of it, unless this is stated in the body of the inspection report.

1EP1 Exercise Evaluation

Quad Cities Station May 2006 Exercise Scenario Manual

Quad Cities Station April 2006 Pre-Exercise Drill Findings and Observations Report;
dated May 12, 2006

Quad Cities Station 2005 Off-Year Exercise Scenario Narrative Summary and Time Line

Draft Quad Cities Station 2006 Exercise Findings and Observations Report; undated

Quad Cities Station Annex to the Exelon Standardized Emergency Plan; Section 3; Revision 23

EP-AA-110; Assessment of Emergencies; Revision 6

EP-AA-111; Emergency Classification and Protective Action Recommendations; Revision 11

EP-AA-112; Emergency Response Organization and Emergency Response Facility Activation and Operation; Revision 9

EP-AA-112-100; Control Room Operation; Revision 7

EP-AA-112-200; TSC Activation and Operation; Revision 5

EP-AA-112-300; OSC Activation and Operation; Revision 5

EP-AA-112-400; EOF Activation and Operation; Revision 6

EP-AA-113; Personnel Protective Actions; Revision 7

EP-AA-114; Notifications; Revision 6

EP-MW-110-200; Dose Assessment; Revision 4

EP-MW-114-100; Midwest Region Offsite Notifications; Revision 5

1EP4 Emergency Action Level and Emergency Plan Changes

Quad Cities Station Annex to the Exelon Standardized Emergency Plan; Revisions 21, 22, and 23

IR 00475146; Minor Errors Identified in Four Maximum Normal Area Radiation Alarm Values in Table F-2

10 CFR 50.54(q) Evaluation and Effectiveness Review 06-27; Revision 23 of Quad Cities Station Annex to Exelon Standardized Emergency Plan

Site-Specific Letters of Agreement with Four Offsite Support Organizations

4OA1 Performance Indicator Verification

EP-AA-125-1001; Emergency Preparedness Performance Indicator Guidance; Revision 3

EP-AA-125-1002; ERO Drill/Exercise Performance - Performance Indicator Guidance; Revision 3

EP-AA-125-1003; ERO Readiness - Performance Indicator Guidance; Revision 4
Quad Cities Station Emergency Planning Zone Sirens' Daily and Monthly Operability
Reports - January 2005 through March 2006

LS-AA-2110; Monthly PI Data Elements for ERO Drill Participation - January 2005
through March 2006

LS-AA-2120; Monthly PI Data Elements for Drill/Exercise Performance - January 2005
through March 2006

LS-AA-2130; Monthly PI Data Elements for ANS Reliability - January 2005 through
March 2006

Sequence of Events for Scenario Used in Several First Quarter 2006 Integrated
Response Facility Drills

IR 00465594; Two Unsuccessful DEP Opportunities During First Quarter 2006 Drills

ERO Required Reading Package 2006-03; Missed PI Opportunities in 2006 First
Quarter Drills

4OA7 Licensee-Identified Violations

IR 00433896; Wording Error Apparent in EAL MU-11

IR 00434537; Wording Error in Unusual Event EAL MU-11

Apparent Cause Report; EAL MU-11 Wording Error

Quad Cities Station Annex to the Exelon Standardized Emergency Plan; Section 3;
Revisions 21, and 22

Procedure EP-AA-120; Emergency Plan Administration; Revisions 5, and 6

Standing Order 05-12; EAL MU-11

LIST OF ACRONYMS USED

ANS	Alert and Notification System
CFR	Code of Federal Regulations
CRS	Control Room Simulator
DEP	Drill and Exercise Performance
DHS	Department of Homeland Security
EAL	Emergency Action Level
EOF	Emergency Operations Facility
ERO	Emergency Response Organization
IR	Issue Report
NRC	United States Nuclear Regulatory Commission

NUREG	Nuclear Regulatory Guide
OSC	Operations Support Center
PI	Performance Indicator
TSC	Technical Support Center